

Application No. 10/767,530

Amendment Date August 13, 2008; Reply to Office action of May 14, 2008

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## Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

Claims 1-5 (cancelled)

Claim 6 (currently amended): An adaptive image region partition method comprises the steps of:

- a) Input a component labeled image and its associated characteristics for each component;
- b) Perform an adaptive two pass ZOI creation method using the component labeled image and component characteristics to create an adaptive ZOI image wherein ~~the adaptive two pass ZOI creation method applies a distance metric depending on component characteristics~~ a component specific weighting factor W is applied to a length function to generated a component weighted length:  $l[(i,j),Z(i,j)] = l(i,j) * w(Z(i,j))$   
Wherein w is a general function of component characteristics that could be related to component size or other factors such as confidence or types of the components.

Claim 7 (cancelled)

Claim 8 (currently amended): The adaptive image region partition method of claim 6 wherein the adaptive two pass ZOI creation step comprises the steps of:

- a) Perform a first pass scan using the component labeled image and component characteristics to create a first pass intermediate adaptive distance image and an adaptive shortest distance component label image wherein the adaptive

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distance image having distance metric ~~depending on component characteristics based on the component weighted length~~;

- b) Perform a second pass scan using the first pass intermediate adaptive distance image and the adaptive shortest distance component label image to create an adaptive distance transform image and an updated adaptive shortest distance component label image wherein the adaptive distance transform image having distance metric ~~depending on component characteristics based on the component weighted length~~.

Claims 9 - 11 (cancelled)

Claim 12 (currently amended): An adaptive cell segmentation method comprises the steps of:

- a) Input a nuclei mask image, its component labeled image and component characteristics;
- b) Input a cell mask image;
- c) Perform adaptive nuclei region partition using the nuclei mask component labeled and image and component characteristics to create adaptive nuclei mask ZOI wherein a component specific weighting factor W is applied to a length function to generated a component weighted length:  $l(i,j) \cdot Z(i,j) = l(i,j) * w(Z(i,j))$   
Wherein w is a general function of component characteristics that could be related to component size or other factors such as confidence or types of the components.
- d) Perform adaptive cell region separation using the cell masks and the adaptive nuclei mask ZOI to generate adaptive cell separated regions wherein the adaptive cell mask having the same component label in the nuclei mask ZOIs is considered as one cell region.

Claims 13-14 (cancelled)